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U N I V E R S I T Y

O F

T O R O N T O

Faculty of Dentistry

Examinations

1962

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UNIVERSITY OF TORONTO
Faculty of Dentistry

ANNUAL EXAMINATIONS, 1962

Preprofessional Year

ANTHROPOLOGY

Answer all questions. All are of equal value.

1. Dental pathology is a significant area of study. Despite modern research, it is still very much with us. It is possible that a study of dental disease throughout the history of man's development may throw light upon these present day ills. With this thought in mind present and comment upon the following:
 - (a) the salient features of dental pathology as seen associated with skulls in the physical laboratory.
 - (b) the distribution of dental disease among native peoples, with special reference to agricultural and preagricultural groups.
 - (c) the relationship between the individual's age and the occurrence of dental disease.
2. Despite the stark grotesqueness of the human skull sitting upon the laboratory table, or upon display in the laboratory case, in the eyes of the beholder it soon becomes a person, another human being, who has played some part in history. With this in mind outline briefly with examples features of the skull which allow us to assess the following:
 - (a) the sex, age and race of the individual observed,
 - (b) the individual's place in evolution,
 - (c) the individual's deviation from normal patterns of growth (anomalies).

3. The archaeologist is often described as a "glorified garbage collector". In the light of your experience in the archaeological laboratory, discuss briefly the following statements and illustrate with examples:
- (a) Iroquois culture had developed considerably above that of a simple hunting and gathering type of society. There was time for warfare, art and leisure time activity.
 - (b) The study of broken pieces of pottery can provide useful clues to the historical position of a given village site.

ANNUAL EXAMINATIONS, 1962

Preprofessional Year

CHEMISTRY 108
GENERAL CHEMISTRY

Examiner - S. S. Danyluk

Logarithm cards supplied; slide rules permitted.
Total marks 150.

Marks

70

PART A

1. Write a brief paragraph on FOUR of the following:

- (a) the crystal structure of graphite,
 - (b) The electronic arrangement (1s, 2s, ...)
- characterizing inert gases,
- (c) the bond formed when an element in the Halogen Family combines with an element in the Carbon Family,
 - (d) the high boiling point of H_2O as compared with the boiling point of H_2S ,
 - (e) the principal quantum number, n.

2. (a) Explain what is meant by a colligative property.
Give three examples of colligative properties.

- (b) Distinguish between a lyophobic colloid and a lyophilic colloid. Discuss briefly the effect of electrolyte concentration on the stability of a lyophobic colloid.

3. Define or discuss, with the aid of examples, THREE of the following:

- (a) Gram-equivalent weight
- (b) Graham's Law of Diffusion
- (c) Azeotrope
- (d) Unit cell

4. (a) What is the essential difference between a covalent bond and a coördinate-covalent bond. Give two examples of each type of bond.

- (b) Define the term half-life of a reaction. Show how the half-life may be used to distinguish between a first and second order reaction.

5. Describe clearly, with the aid of appropriate equations, the buffer action of an acid buffer solution.

6. Answer any FIVE parts of this question.

(a) One liter of a certain organic vapor weighs 0.604 grams at 25°C and 700 mm pressure. What is the molecular weight of the gas?

Analysis of the gas gives the following results: C = 75.0%; H = 25.0%. What is the correct molecular formula for this compound?

Gas Constant, R = 0.08205 liter-atm.deg.⁻¹mole⁻¹
Atomic weights: C = 12.0, H = 1.01

(b) The solubility product (K_{sp}) of PbI_2 is 1.04×10^{-8} moles³liter⁻³ at 25°C. Calculate the solubility of PbI_2 in pure water (in moles per liter) at 25°C.

What is the effect of adding a second salt such as Na_2SO_4 on the solubility of PbI_2 ?

(c) A certain gas dissociates according to the reaction



If 19.5% of A_2B_2 is dissociated at a total pressure of two atmospheres and 25°C what is the equilibrium constant, K_p for the reaction?

What effect will an increase in the total pressure have on the dissociation of A_2B_2 ?

(d) Nitrogen dioxide, NO_2 , is decomposed photochemically by light of wave length 4050 Å°. If two photons are required, on the average, to decompose one NO_2 molecule, how many calories of light are required to decompose one-half mole of NO_2 ?

Planck's constant: $h = 6.62 \times 10^{-27}$ erg-seconds.

(e) When 7.00 grams of benzoic acid, C_6H_5COOH , are added to 500 grams of benzene the freezing point of benzene is lowered 0.288°C. What is the apparent molecular weight of benzoic acid in benzene? What is the molecular formula for benzoic acid in benzene? Explain.

Molal freezing point depression constant for benzene 5.02°C. Atomic weights: C = 12.0, O = 16.0, H = 1.01.

(f) Calculate the hydroxyl ion concentration of a 0.50 molar solution of NH_4Br in water at 25°C. What is the pH of this solution?

Ionization constant of water,

$$K_w = 1.01 \times 10^{-14} \text{ at } 25^\circ\text{C}.$$

Ionization constant of ammonium hydroxide,

$$K_i = 1.75 \times 10^{-5} \text{ at } 25^\circ\text{C}.$$

(g) The following data were obtained for the unimolecular decomposition of a certain compound, A, in solution.

Time (sec.)	0	27	62	124
Concentration of A (moles liter ⁻¹)	0.500	0.370	0.250	0.124

What is the reaction rate constant for this reaction? Calculate the time required for the concentration of A to reach 0.05 moles per liter.

UNIVERSITY OF TORONTO
Faculty of Dentistry
Faculty of Pharmacy

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ANNUAL EXAMINATIONS, 1962

First Year

ENGLISH COMPOSITION

Write a well-organized essay of approximately 1,000 words on ONE of the following topics. You are being examined on your ability to organize and express ideas, arguments, and supporting evidence. The essay should indicate competence in spelling, punctuation, and paragraphing. Write legibly.

1. "No man is an Island, entire of itself; every man is a piece of the Continent, a part of the main;any man's death diminishes me, because I am involved in Mankind; and therefore never send to know for whom the bell tolls; it tolls for thee."
(John Donne)
2. The Aims and Methods of Modern Advertising.
3. Should literature be written to instruct or to entertain? You might illustrate your answer to this question by referring to specific works on this year's English course.

I year

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English Literature

UNIVERSITY OF TORONTO
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ANNUAL EXAMINATIONS, 1962

First Year

ENGLISH LITERATURE

Answer FOUR questions one from each section.

A

1. Compare Miller's view of the common man as a proper vehicle for tragedy with Aristotle's conception of the tragic hero.
2. "Christianity, Psychology and Socialism all tend to destroy tragedy." Discuss.
3. To what extent does Great Expectations reflect the influence of earlier novelists?
4. Examine the view that the function of poetry is to teach. What poets on the course do you regard as teachers?

B

5. Discuss Shaw's contention concerning Antony and Cleopatra that "the world was not well lost by the twain".
6. Compare the attitudes of Shakespeare and Milton toward woman as revealed in their respective portraits of Cleopatra and Dalila.
7. "Death of a Salesman is more a sociological survey than a tragedy." Discuss.
8. "The play would be an incoherent and clumsy failure were it not for the brilliant second act." Discuss this assessment of Major Barbara.

C

9. How far is Swift's criticism of Man and Society, in Books II and III of Gulliver's Travels, relevant for us today?

10. "It is remarkable that Pip retains our sympathy in what is, after all, a 'snob's progress'." Discuss.
11. Is Huckleberry Finn anything more than an amusing adventure story for boys?
12. "Portrait of an Artist describes the conflict in the life of every individual, experienced in realizing his personal identity." Discuss.

D

13. Give a critical analysis of the following poem.

To the Thawing Wind

Come with rain, O loud Southwester!
Bring the singer, bring the nester;
Give the buried flowers a dream;
Make the settled snowbank steam;
Find the brown beneath the white;
But whate'er you do tonight,
Bathe my window, make it flow,
Melt it as the ice will go;
Melt the glass and leave the sticks
Like a hermit's crucifix;
Burst into my narrow stall;
Swing the picture on the wall;
Run the rattling pages o'er;
Scatter poems on the floor;
Turn the poet out of door.

14. "Donne's poetry, like that of Browning, is more directed to the head than the heart." Discuss, referring to at least one poem by each poet.
15. Compare a poem by Pope with a poem by Keats OR Yeats OR Eliot.

UNIVERSITY OF TORONTO

Faculty of Dentistry - Pre-professional Year

Faculty of Forestry - First Year

ANNUAL EXAMINATIONS, 1962

PHYSICS

Examiner - D. G. Ivey

Slide rules may be used. Clark's Tables to be provided.

Answer Question 1 and seven others.

1. (a) The measurement of two lengths A and B gives $A = 2.8$ cm and $B = 3.6$ cm. Express the product AB to the accuracy which seems reasonable.
- (b) Car A is heading East at 40 m.p.h. and car B West at 30 m.p.h. on the same straight road. What is the velocity of car A relative to car B (i) before they meet, (ii) after they pass?
- (c) Explain why it is convenient to introduce such quantities as angular velocity and angular acceleration in describing rotation.
- (d) Discuss the question of whether or not a man in an earth satellite is "weightless".
- (e) Discuss what is meant by an "exponential decrease with time" by describing what sort of physical situation gives this result, and sketching a graph of this behaviour.
- (f) "Newton's law of gravitation and Hooke's law of elasticity are different kinds of physical laws". Discuss this statement.
- (g) Distinguish between each of the following pairs:
 - (i) average value and root-mean-square value
 - (ii) fundamental and derived physical quantities
 - (iii) gravitational and elastic potential energy
 - (iv) electrical resistance and reactance
 - (v) impulse and momentum.

2. (a) An automobile accelerates from 20 ft/sec to 40 ft/sec in 10 seconds over a distance of 240 ft. Is this possible at a constant acceleration? Is it possible at all? If so, what is the average speed?
- (b) An automobile moving at a steady speed on a horizontal road must develop 10 H.P. at 40 m.p.h. and 22.5 H.P. at 60 m.p.h. How does the frictional retarding force depend on speed?

3. A 1-lb stone is suspended by a string 5 ft long from a point 8 ft above the floor. It is moving in a horizontal circle 3 ft in radius.
 - (a) Calculate the tension in the string.
 - (b) Calculate the period of rotation.
 - (c) The string is cut. Draw two diagrams, roughly to scale, showing the circular path of the stone and its path after the string is cut until it hits the floor, one diagram a view from directly overhead and one a view from the side. Mark distances on the diagrams.

4. A small ball, hanging from a hook in a wall by a string, just touches the wall. The ball is pulled out from the wall until the string is horizontal, and released. It bounces off the wall, rising until the string makes an angle of 60° with the wall.

(a) What was the tension in the string, in terms of the weight of the ball, just before the impact?

(b) Is momentum conserved in the impact with the wall? Give reasoning.

(c) What fraction of the mechanical energy of the ball is lost in the impact? What happens to it?

(d) How high will the ball rise, in terms of the angle of the string, on the next bounce?

5. A toy gyroscope of moment of inertia 500 gm-cm^2 is accelerated in 0.2 second to a speed of 600 r.p.m. by exerting a steady pull P on a string wound around the axle (of radius 0.2 cm). (a) What is P in grams? (Neglect friction.) (b) How many times must the string have been wound around the axle? (c) A piece of gum is stuck on the wheel 10 cm from the axis of rotation. The adhesive force is 30 times its weight. Will it stay stuck? (d) How much heat in calories is generated when the wheel is brought to rest by pushing on it with a thumb?

6. A Foucault pendulum consists of a 20 lb ball suspended by a nickel wire 130 ft long and 1 mm^2 in cross section. It is displaced 10 ft sideways from its equilibrium position and released. (a) Calculate its period. (b) Calculate its energy in ft-lb . (c) Calculate the change in period if the temperature drops 40°C . (d) Calculate the weight in grams which would have to be added to keep its period unchanged when the temperature drops by 40°C .

7. (a) The rubber in a balloon weighs 500 gm . Helium is pumped into the balloon until it is "weightless" in air at NTP. Its volume is then 1 m^3 . Calculate (i) the average energy of the helium molecules, (ii) the pressure of the helium gas (note densities of air and helium at NTP in Clark's tables).

(b) One mole of a monatomic ($c_v = 3R/2$) ideal gas at NTP is compressed at constant pressure to half its volume. Calculate the final temperature, the work done, the heat transferred, and the change in internal energy of the gas. (Express energies in calories, take $R = 2 \text{ cal/mole-}^\circ\text{C}$.)

8. (a) A household refrigerator operating between 20°C and 0°C has an overall coefficient of performance one-half that of an ideal refrigerator operating between these temperatures. Calculate the energy supplied to the kitchen for each kwh of electrical energy used.

(continued)

8 (continued)

(b) The c.g.s. unit of viscosity is the poise. The viscosity of a gas is given by $\eta = \frac{1}{3} n m \bar{v} \lambda$ where n is the number of molecules per unit volume, m is the mass of a molecule, \bar{v} is the mean molecular speed and λ is the mean free path. (i) Express the poise in terms of the fundamental c.g.s. quantities. (ii) How does the viscosity of a gas depend on density and on temperature?

9. A capacitor of capacitance 10 microfarads has a potential difference of 500 volts between the plates. (a) How many excess electrons are on the negative plate? (b) How much energy in electron volts would be required to move one electron from the positive to the negative plate? The capacitor is connected across a 1000 ohm resistor which is insulated and of heat capacity 2 cal/C°. Calculate (c) the initial current through the resistor, (d) the total temperature rise of the resistor.

10. A light bulb stamped "100 watts, 100 volts" (which acts as a pure resistance) is connected in series with a coil of inductance 0.4 henries (and negligible resistance) to a 100 volt, 25 cycle/sec A.C. source. (a) What is the resistance of the bulb? (b) What power is used by the bulb? (c) If the system is plugged into a 60 c/s 100-volt outlet instead of the 25 c/s one, will the illumination produced by the bulb increase or decrease? (d) What capacitance in series with the lamp and coil and 60 c/s source would produce maximum illumination? What power is then used?

11. (a) The index of refraction of water is 1.33. Calculate (i) the speed of light in water, (ii) the wavelength in water of orange light (wavelength in air 6000 A.U.). Is it still orange light?

(b) There is a point source of light on the bottom of a tank of water 6" deep. Calculate (i) the apparent depth of the light source as viewed from directly overhead, (ii) the diameter of the largest circle at the surface through which light can emerge from the water.

12. A beam of monochromatic light of wavelength 4000 A.U. and intensity 3 milliwatts/cm² falls on a surface. (a) Calculate the energy and momentum of a photon of this radiation. (b) Calculate the radiation pressure on the surface if the beam is perpendicular to the surface and is completely absorbed. (c) The work function (energy required to eject an electron) of the surface is 3.5 electron volts. Will photoelectrons be emitted?

Preprofessional

Zoology

UNIVERSITY OF TORONTO
Faculty of Dentistry

ANNUAL EXAMINATIONS, 1962

Preprofessional Year

ZOOLOGY

Parts A and B to be written in separate books.

Part A

1. With the aid of diagrams describe in both an amphibian and a mammal:-
 1. Breathing movements.
 2. Gas transfer in the organs of respiration.
2. Write an explanatory note on (a) and any other three of the following titles.
 - (a) Present thought on the function of the thymus gland in mammals.
 - (b) The significance of biological classification.
 - (c) Locomotion in one species of Protozoa.
 - (d) The life cycle of the liver fluke.
 - (e) Symmetry in coelenterates and arthropods.
 - (f) Serially arranged appendages of the crustacea.

Part B

3. (a) List the characteristics of a coelom in Vertebrates.
- (b) By the use of labelled diagrams only illustrate how the coelom develops in the vertebrate embryo.

OR

With the aid of diagrams indicate how the coelomic cavities of an earthworm, a fish and a mammal differ from one another.

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- (a) Draw a cell in the metaphase stage of mitosis and label all parts.
 - (b) On a separate enlarged drawing, at a higher magnification, show the detail of one pair of chromosomes and the attached spindle fibres from the cell drawn in (a).
 - (c) Draw, at the same magnification shown in (b), the same pair of chromosomes and attached spindle fibres as seen at metaphase in the first part of the meiotic or reduction division.
 - (d) Write a brief note on the significance of the differences illustrated by the two enlarged drawings.

Write brief notes on three of the following using diagrams to illustrate your answers:

- (a) The control of the rate of beat of the heart.
- (b) The effect of insulin and adrenalin on the carbohydrate balance in the body. Use an equilibrium diagram in your answer.
- (c) How a nerve impulse passes along a series of neurones.
- (d) If "cephalization" arose as a series of mutations discuss why you feel it persisted. Give examples from three invertebrate phyla.

UNIVERSITY OF TORONTO
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ANNUAL EXAMINATIONS, 1962

First Dental Year

BIOCHEMISTRY

Answer Four Questions

1. Describe briefly the metabolic pathway of fatty acid oxidation to the stage of acetyl-coenzyme A. Point out the differences in the oxidative and synthetic pathways of fatty acid metabolism with respect to intracellular localization and coenzyme requirements. Discuss the implications of these differences.
2. Discuss briefly the principles of
 - i) paper chromatography
 - ii) colorimetric analysis
 - iii) iodine number determinations
3. Discuss the factors which determine the rate of synthesis of glycogen from glucose -6- phosphate and the rate of breakdown of glycogen to glucose -6- phosphate in the muscle cell.

- 2 -

4. Cite one piece of evidence which shows that a change in a gene can lead to a change in the amino acid sequence of the corresponding protein. Describe a sequence of chemical events which might link the gene with the biosynthesis of the protein.
5. Discuss the chemical nature of the contractile elements in muscle fibres. Discuss the role of ATP and of creatine phosphate in muscular contraction.

II year

Comparative Dental Anatomy

UNIVERSITY OF TORONTO
Faculty of Dentistry

ANNUAL EXAMINATIONS, 1962

First Dental Year

COMPARATIVE DENTAL ANATOMY

Examiner:- C. S. Churcher

Answer Question Number ONE and ANY THREE other Questions.
Wherever appropriate, labelled diagrams should be used to illustrate your answers.

1. a) Give a detailed account of the embryonic development of the mammalian tooth from the primordial stage to the fully erupted tooth.

b) Explain the differences between a milk tooth and a permanent tooth with respect to timing, position and Zahnreihen.

c) Give dental formulae for Homo sapiens (man) for the milk dentition and the permanent dentition to show both the numerical and positional homologous teeth (Four formulae).
2. Discuss the herbivorous dentitions of Ceratopsida, Saurischia, Ornithischia and Chelonia.
3. There are three main conformations of the glenoid fossa. Show how these are related to possible jaw movements in mammalia and give at least three examples from divergent groups as illustrations of the principles.
4. Discuss the types of dentition found in browsing animals. Use examples from Osteichthyes, Extinct Reptilia and ungulates to illustrate your answer.

5. What is a carnivore? Discuss carnivory and carnivorous adaptations in Chondrichthyes, Osteichthyes and Reptilia. Why has the carnassial developed in Mammalian carnivores?
6. Give an account of the Scales of fishes and the probable history of the phylogeny of the different types and their relationships to dentitions.

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ANNUAL EXAMINATIONS, 1962

First Dental Year

GROSS ANATOMY

All questions are of equal value

1. Give a complete account of the temporomandibular joint.
2. Describe the tongue under the headings:
 - A. Development
 - B. Muscles and movements
 - C. Nerve supply
 - D. Lymphatic drainage
3. Give a complete account of the origin, course and termination of the esophagus. State its immediate relationships.
4. Describe:
 - A. The course, immediate relationships and distribution of the inferior dental nerve.
 - B. The pathway for pain impulses that extends from the trigeminal nerve to the cerebral cortex. Suggest how sensation excited via the trigeminal nerve may be felt in the neck.

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UNIVERSITY OF TORONTO
Faculty of Dentistry

ANNUAL EXAMINATIONS, 1962

First Dental Year

MICROSCOPIC ANATOMY

1. (a) Describe the general microscopic plan of the small intestine.
(b) How could you distinguish microscopically between the duodenum, jejunum, and ileum?
2. State the microscopic structure of the lining of the nasal cavities and maxillary air sinuses?
3. Describe the microscopic structure of the submandibular salivary gland.
4. Describe the deposition and mineralization of dental enamel.
5. What is the mechanism by which neural influences affect hormone secretion by the pituitary gland?

UNIVERSITY OF TORONTO
FACULTY OF DENTISTRY
ANNUAL EXAMINATIONS, 1962

First Dental Year

CHEMISTRY 2L6
ORGANIC CHEMISTRY

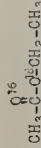
Examiner - R. R. Hiatt

No aids necessary.

All questions have equal value.

1. (a) Write structures of and name, according to the IUC system, all of the possible isomers of C_3H_6O .
(b) Choose any four of these compounds. Write reactions for each with each of the following reagents:
(i) HBr, (ii) Br_2 , (iii) NaOH, (iv) $K^+NO_4^-$, (v) Pt and H_2
If with a given compound and reagent there is a multiplicity of possible products, depending on the conditions of reaction (i.e. concentration, temperature, etc.), give the several products and state what the conditions are that favour each.

2. (a) From what you know of the acid catalyzed reaction of ethanol with acetic acid to form ethyl acetate, suggest by means of diagrams and discussion:
(i) a mechanism for acid catalyzed hydrolysis of ethyl acetate to acetic acid and ethanol,
(ii) a mechanism of base catalyzed hydrolysis of ethyl acetate to sodium acetate and ethanol.
(b) Suppose that your ethyl acetate contains O^{18} and is in fact



Where does your mechanism predict the O^{18} will eventually appear in

- (i) the acid catalyzed hydrolysis?
(ii) the base catalyzed hydrolysis?

How could you separate this component from the reaction mixture? What means would you use to test the compound to verify your prediction?

3. (a) Write a structural formula for each of the following. Name if possible.

- | | |
|-------------------------|---------------------------|
| (i) a disaccharide | (vi) an acetal |
| (ii) a "meso" compound | (vii) an azo dye |
| (iii) an enol | (viii) a tertiary amine |
| (iv) a tripeptide | (ix) a sulfonamide |
| (v) a synthetic polymer | (x) a general anaesthetic |

- (b) Pick any two of these compounds and show how you could synthesize them using acetylene ($CH\equiv CH$) as the only organic starting material. (All organics must be prepared from $CH\equiv CH$). Contributions will be judged on complexity as well as feasibility.

4. Discuss at length EITHER

(a) Optical Activity in organic compounds. (Polarized light, measurement of rotation, asymmetric carbons, number and kinds of isomers, properties, etc.)

OR

(b) Chemistry of Proteins. (Properties, constitution, degradation, determination of structure, synthesis, etc.)

II year

Bacteriology

UNIVERSITY OF TORONTO
Faculty of Dentistry

ANNUAL EXAMINATIONS, 1962

Second Dental Year

BACTERIOLOGY

1. Explain the following terms using appropriate examples:
 - (a) Heterotrophic organism
 - (b) Virulence
 - (c) Pheno type
 - (d) Passive immunity
 - (e) Complement
2. Explain concisely how to isolate and identify the following organisms from samples of the normal flora of humans:
 - (a) Bact. Coli
 - (b) Strep. Faecales
 - (c) N. Catarrhales
 - (d) Pneumococcus
3. (a) Name the toxins, enzymes, and other cellular components of Haemolytic Streptococci Lancefield group A which contribute to its pathogenicity.

(b) What is their contribution?
4. (a) Name five different types of vaccines which are used clinically for active immunization.

(b) Name a disease for which each type is used.
5. What are the differences between a precipitin type of hypersensitivity and an atopic or allergic type of hypersensitivity in respect to:
 - (a) mode of sensitization
 - (b) antigens
 - (c) antibodies
 - (d) target tissues
 - (e) procedures demonstrating passive transfer
 - (f) desensitization procedures

6. (a) What are the mechanisms involved in three types of food poisoning?
- (b) What are the differences in the clinical symptoms?
- (c) List the steps of the laboratory diagnosis in each case.
7. What is the pathogenesis and clinical diagnosis of an infection with mumps virus?
8. Answer either 8A or 8B
- (a) Describe briefly the method used to isolate and type the virus in a case of non paralytic polio.
- (b) In what instances are some features of the natural host defence mechanisms thought to be not beneficial for the host?
9. (a) What is the mode of action of Penicillin?
- (b) What factors influence its clinical use?
10. Write a short note on any three of the following:
- (a)
 - (a) The function of the protoplasmic membrane of bacteria.
 - (b) Schick test
 - (c) Dick test
 - (d) Tuberculin test
 - (e) Wasserman test
 - (f) Bacterial spore
 - (g) Acid formation by bacteria in liquid cultures
 - .(h) Bacteriophage

UNIVERSITY OF TORONTO
Faculty of Dentistry

ANNUAL EXAMINATIONS, 1962

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Second Dental Year

✓ GENERAL PATHOLOGY

1. Define: inflammation.
2. Describe briefly three mechanisms by which an acute inflammatory exudate tends to protect the organism.
3. List the five cardinal signs of acute inflammation.
4. The characteristic cell of an acute inflammatory exudate is: (a) the lymphocyte; (b) the neutrophilic polymorphonuclear leucocyte; (c) the macrophage; (d) the plasma cell.
5. Define: (a) chemotaxis; (b) phagocytosis.
6. Describe in a few lines the principal characteristics of granulation tissue.
7. Name two factors which may delay the rate of healing of a wound.
8. A myocardial infarct heals by (a) regeneration; (b) resolution; (c) organization; (d) suppuration.
9. Describe briefly two gross features of organs involved by chronic inflammation.
10. Name two local defense mechanisms which are operative against infection in the oral cavity!
11. (a) What is the main source of tuberculous infection today?
(b) What is the most common route of infection?
12. Name three organs other than the lungs which are frequently involved by tuberculosis.

13. Describe briefly two methods by which tuberculosis may spread within the lungs.
14. (a) Name the characteristic lesion of primary syphilis.
(b) What is the ultimate fate of this lesion?
15. (a) Name the stage of syphilis in which gummata are found.
(b) In what stage of syphilis is the aorta damaged?
16. Define: (a) hyperplasia; (b) hypertrophy; (c) atrophy.
17. Name three factors causing atrophy.
18. Name three characteristics of a malignant tumour which help to distinguish it from a benign tumour.
19. Name four routes by which a tumour may spread.
20. (a) Name a precancerous lesion occurring in the oral cavity.
(b) Name the commonest malignant tumour of the oral cavity.
21. Mitral stenosis usually results from: (a) syphilis; (b) gonococcal endocarditis; (c) congenital valvular defects; (d) rheumatic fever.
22. A coronary occlusion is always followed by (a) thrombosis; (b) embolism; (c) fatty degeneration of the myocardium; (d) none of these.
23. Thrombi are most likely to be found in: (a) veins; (b) arteries; (c) heart; (d) capillaries.
24. Infarction is due to a decrease in: (a) oxygen supply; (b) collateral circulation; (c) venous return; (d) blood pressure.
25. Secondary amyloidosis is associated with: (a) malnutrition; (b) prolonged suppuration; (c) chronic pyrexia; (d) liver cirrhosis.

26. Name five histological changes which occur in heavily irradiated skin.
27. Name five diseases that may be associated with pathological calcification.
28. Name five possible fates of a thrombus.
29. Name five causes of oedema.
30. Define: (a) embolism; (b) aneurysm; (c) purpura; (d) autolysis; (e) haematoma.
31. (a) Name the diagnostic lesion found in the myocardium in acute rheumatic fever.
(b) Name the heart valves commonly involved by rheumatic fever.
32. Name two complications of myocardial infarction.
33. Name three aetiological factors which may cause aneurysms.
34. (a) What is the usual aetiologic agent in lobar pneumonia?
(b) Name two complications of lobar pneumonia.
35. Name three causes of intestinal obstruction.
36. (a) What is the aetiologic agent in infectious hepatitis.
(b) Name two procedures which may transmit infectious hepatitis.
37. (a) Name two causes of obstruction of the common bile duct.
(d) Name the condition which may occur in the liver as the result of prolonged intermittent obstruction of the extrahepatic bile ducts.

38. Name the type of malignant tumour most commonly found (a) in the esophagus; (b) in the stomach.
39. List three diseases in which small contracted (scarred) kidneys may be found.
40. Name two conditions in which neutrophilic leukocytosis occurs.
41. Is the clotting time normal or prolonged in haemophilia?
42. Define: (a) anemia; (b) leukopenia.
43. Name three causes of delayed union of fractures.
44. Cavernous sinus thrombosis may be a major complication of an infection of (a) the ear; (b) the lung; (c) the upper lip; (d) the tonsils.
45. Cerebral infarcts often undergo: (a) organization; (b) liquefaction; (c) fibrosis; (d) regeneration.
46. List three means by which infecting organisms may reach the meninges.
47. Name three pathological conditions which may be found in the adrenal gland in Cushing's syndrome.
48. Name three pathological conditions which may be found in the adrenal gland in Addison's Disease.
49. Define: (a) anaplasia; (b) pleomorphism.
50. What is Hodgkin's disease?

UNIVERSITY OF TORONTO
Faculty of Dentistry

ANNUAL EXAMINATIONS, 1962

Second Dental Year

PHARMACOLOGY

Write plainly. Up to 5 marks will be added for neatness, legibility and concise answers.

Marks

- | | |
|----|--|
| 12 | 1. Write a brief note on the pharmacology of amphetamine, codeine, and mercury, pointing out any serious side effects or toxic effects that might occur. |
| 12 | 2. Define the terms tolerance, addiction, nicotinic, sympatholytic. Give an example of a drug to illustrate each definition. |
| 15 | 3. Name five methods by which drugs may be administered to the body; discuss the relative values of each. |
| 13 | 4. Prescribe for a patient some atropine sulphate tablets 0.6 mg. each. What would be the purpose of giving such a prescription? What effect would you expect it to have on the pulse rate? Give reasons for your answers. |
| 15 | 5. Enumerate pharmacological actions of adrenaline and noradrenaline, pointing out differences and similarities. |
| 14 | 6. (a) Name tranquilizers and hormones given as medicines which have frequently caused complications during a subsequent anaesthesia.
(b) Describe the complications.
(c) Cite measures to overcome the complications. |
| 14 | 7. Describe causes and contributing factors which may lead to fainting during local anaesthesia. State preventive and curative measures. |

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II year

Physiology

UNIVERSITY OF TORONTO
Faculty of Dentistry

ANNUAL EXAMINATIONS, 1962

Second Dental Year

✓ PHYSIOLOGY

Answer only FIVE of the seven questions. The questions are of equal value.

1. (a) List the components of the red blood corpuscles of man, and indicate their nature and functions
(b) Outline and explain the actions of the factors involved in haemostasis (arrest of bleeding).
2. (a) Show, by means of a table or diagram, the operation of the factors involved in the transfer of fluids between the blood and tissues.
(b) Outline the operation of the factors that control the flow of blood in capillary beds.
3. (a) Discuss the control of the secretion of saliva in man.
(b) Outline the processes (stages) of swallowing (deglutition) in man, and their control.
4. (a) Outline the roles of stretch reflexes in the control of:
 - i. Circulation of the blood.
 - ii. Respiration.
 - iii. Tone (tonus) in skeletal muscle.
(b) Describe and explain the effects of increased amounts of carbon dioxide in the blood on respiration.

5. (a) Outline briefly the functions of the kidney tubules.
(b) Describe and explain the effects on the activities of the kidney of:
 i. Removal of the adrenal glands.
 ii. Removal of the pancreas.
6. (a) Describe the electrical and other changes associated with the passage of impulses in nerve fibers.
(b) Outline the effects produced by any one of the following:
 Removal of the thyroid glands, or
 Removal of the ovaries, or
 Removal of the pituitary gland.
7. Write notes on the following:
(a) Basal metabolic rate.
(b) Factors that influence the contractility of cardiac muscle.
(c) Synapses.
(d) Cyanosis.

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Faculty of Dentistry

ANNUAL EXAMINATIONS, 1962

Third Dental Year

Marks

ANAESTHESIA

- 25 1. a) With the aid of a diagram, discuss the anatomical landmarks involved in mandibular block anaesthesia.
- b) Outline in point form the technique for mandibular block.
- 25 2. a) Discuss the significance of emergency armamentarium in the dental office.
- b) What should this armamentarium include? Outline the indications for each aspect.
- 25 3. a) According to chemical structure, classify in chart form the different local anaesthetic agents used today.
- b) What is the chemical mode of action of a local anaesthetic?
- 25 4. Discuss the importance of pre-anaesthetic evaluation where a general anaesthetic is being employed in connection with a dental procedure.

III year

Nutrition and Preventive Dentistry

UNIVERSITY OF TORONTO
Faculty of Dentistry

ANNUAL EXAMINATIONS, 1962

Third Dental Year

NUTRITION AND PREVENTIVE DENTISTRY

Answer PARTS A, B, and C in separate examination books.

Marks

NUTRITION

PART A

- 9 1. List three nutrients which are thought to be essential for normal tooth formation. For each of these nutrients, list three foods which might be recommended as good sources of that nutrient in Canada.
- 12 2. For either calcium or iron (one only) describe:
 (a) the factors affecting its absorption and utilization in the body, indicating where these have their influence.
- 4 (b) suitable intakes to be recommended for a man 25 years old and for a child 8 years old.
- 8 3. Briefly explain why the quality of a food protein affects the quantity of protein required

PART B

- 17 4. (a) Why are the following foods included in Canada's Food Guide:
 (1) Milk
 (2) Citrus fruits
 (3) Green or yellow vegetables
 (4) Whole grain cereals
 (5) Liver
- (b) Describe in detail a method of diet assessment based on Canada's Food Guide but with emphasis also on the dental aspect of the diet

Marks

PREVENTIVE DENTISTRY

PART C

- 15 1. Briefly discuss fluoridation under the following headings:
- A. Metabolism of fluoride
 - (i) Storage in skeletal tissue
 - (ii) Excretion
 - B. Home administration of systemic fluoride.
(Refer to one mode of administration only)
- 15 2. "Saliva is a most important natural defense mechanism in relation to dental health".
- Elaborate on this statement by referring to constituents and properties of saliva.
- 20 3. Discuss significant structural and chemical factors that determine susceptibility of teeth to dental caries.

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Annual Examinations, 1962

ORAL PATHOLOGY

Third Dental Year

No Paper Available

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ANNUAL EXAMINATIONS, 1962

Third Dental Year

SURGERY

1. A patient has an acute pyogenic infection of soft tissues. Describe the clinical features and treatment.
2. Discuss briefly the selection of an antibiotic for the treatment of an acute infection and the complications that may arise from its use.
3. Describe the clinical features and treatment of an osteoclastoma of the mandible.
4. (a) Describe the clinical features of a carcinoma of lateral border of tongue.
(b) Discuss the spread of malignant tumours.
(c) Discuss in a general way the treatment of malignant disease.
5. Define:

Aseptic Necrosis
Open fracture
Carbuncle
Shock

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ANNUAL EXAMINATIONS, 1962

Fourth Dental Year

PAPER #1

Marks

OPERATIVE DENTISTRY

- | | |
|----|--|
| 12 | 1. (a) List the undesirable physical properties of silicate cement.
(b) List the technical procedures that should be carried out to minimize these undesirable physical properties in the use of silicate cement. |
| 12 | 2. (a) What is the difference between cohesive and non-cohesive gold?
(b) What is the purpose of annealing gold foil and how is it carried out?
(c) List the indications for a gold foil restoration. |
| 8 | 3. Enumerate the possible causes of failures in amalgam restorations. |
| 7 | 4. List the materials you would use for pulp capping for a minute pulp exposure under an amalgam restoration. |
| 11 | 5. (a) Give three indications and three contraindications for placing a porcelain jacket crown on an upper central.

(b) One year after a jacket crown was placed on an upper lateral the gingival tissue became discoloured and inflamed. Give three causes for this change in the gingival tissue. |

Marks

PROSTHODONTICS

- 20 1. In complete denture prosthesis name the pertinent factors necessary for a comprehensive examination of an edentulous patient.
- 10 2. In complete denture prosthesis;
 (a) what factors may cause gagging?
 (b) what are the causes of peripheral and ridge soreness?
 (c) what are the causes of a burning sensation in the maxillary anterior ridge area?
- 20 3. In removable partial denture prosthesis what features must be present in the design to assure;
 (a) retention
 (b) stabilization
 (c) functional tolerance

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ANNUAL EXAMINATIONS, 1962

Fourth Dental Year

PAPER #2

MEDICINE

Marks

- 25 1. (a) Discuss the causes of Sub-acute Bacterial Endocarditis.
- (b) How can you recognize the patients in your practise who are liable to develop Sub-acute Bacterial Endocarditis, and what precautions should you take to prevent it?
- (c) Describe the clinical signs in an advanced case of Sub-acute Bacterial Endocarditis.
- 25 2. Discuss fully five of the following:
- (a) Angina Pectoris
 - (b) Hemiplegia
 - (c) Pleurisy
 - (d) Vomiting
 - (e) Acute Leukemia
 - (f) Hyperthyroidism

MarksPERIODONTICS

- 20 1. A patient complains of pain in the area of one of the temporomandibular joints. List the steps of the examinations that should be employed to determine the possibility that occlusion of the teeth is a causative factor. State concisely the evidence that each step of the examination might reveal.
- 15 2. Discuss concisely the pericemental abscess under the headings: cause, signs and symptoms, treatment.
- 15 3. Discuss concisely the cause, signs and symptoms, treatment and prognosis of acute necrotic gingivitis.

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Fourth Dental Year

PAPER #3

ORTHODONTICS

marks

- 15 1. (a) List the possible causes of a diastema between maxillary central incisor teeth.
 (b) Indicate by a percentage figure the incidence of each cause in the child population.
 (c) How may we differentially diagnose between the three commonest causes?
- 20 2. (a) What cranio-facial characteristics would be desirable where correction of a Class II, Division I malocclusion by use of a monobloc is being considered.
 (b) Outline the principles of monobloc action in correcting overjet, overbite and width relations.
 (c) Precisely which muscles will be activated to provide the force required to direct maxillary teeth distally in monobloc treatment.
- 15 3. A maxillary right first permanent molar has erupted into the space of a prematurely lost maxillary right second deciduous molar. The tooth has erupted forward so that it is in a normal axial inclination. Sketch or outline in point form the exact construction and adjustments required in both the labial arch and face-bow of a cervical headgear which will be used to carry this molar distally.

PAEDODONTICS

- 15 1. A patient age four years presents with \overline{E} requiring extraction. All other teeth are non-carious and the deciduous second molars on the left side according to Baume's classification have a distal step.

Disregarding technical procedures, outline in point form the steps to be taken to maintain space until the child is 13 years of age.

ks

2. After examination of a $7\frac{1}{2}$ year old patient you have diagnosed the following:

(a) $\begin{array}{ccc|ccc} 6 & 2 & 1 & 1 & 2 & 6 \\ \hline 6 & 2 & 1 & 1 & 2 & 6 \end{array}$ completely erupted.

(b) $\overline{E D|E}$ pulp involvements, sinuses in buccal folds

(c) $\underline{D|D}$ pulp involvements, sinuses, and patient complaining of pain in both areas.

(d) $\underline{E|E}$ M.O. cavities, slight dentine involvements.

(e) $\overline{6}$ Occlusal cavity, x-ray indicates caries penetrates the dentine about $\frac{1}{2}$ m.m.

Outline in point form a treatment plan that could be completed in four appointments.

3. The eruptive pattern of mandibular permanent incisor teeth is a significant factor in the prognosis of occlusion.

Enumerate four possible paths of eruption of the mandibular permanent incisors and briefly describe the clinical appearance of each.

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ANNUAL EXAMINATIONS, 1962

Fourth Dental Year

PAPER #4

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Marks

ORAL SURGERY & ANAESTHESIA

- 12½ 1. (a) Define a cyst.
(b) Classify cysts found in the oral cavity under two headings. Give two examples of each.
(c) Briefly outline the treatment of cysts.
- 12½ 2. (a) Give a simple classification for fractures of the mandible.
(b) Outline the treatment for a patient presenting with a fracture between the lower left 2nd bicuspid and 1st molar. There is little displacement and the patient has a good complement of teeth.
- 12½ 3. A thirty-year-old male presents with an acute pericoronal infection around a partially erupted lower right 3rd molar. Write out the prescriptions that you would give him to:
(a) control his pain
(b) combat the infection
- 12½ 4. (a) Discuss the significance of pre-medication in Dentistry.
(b) Briefly classify the drugs utilized in pre-medication.

THE STATE OF NEW YORK
IN SENATE

January 10, 1907

REPORT

OF THE

COMMISSIONERS OF THE LAND OFFICE

IN RESPONSE TO A RESOLUTION PASSED BY THE SENATE
JANUARY 10, 1907

ALBANY: PUBLISHED BY THE STATE OF NEW YORK
PRINTED BY THE STATE OF NEW YORK
1907

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PRINTED BY THE STATE OF NEW YORK
1907

DENTAL RADIOLOGY

1. Describe the radiographic appearance of Rarefying Osteitis at the apex of a tooth.
What other conditions can cause a similar appearance and how may they be differentiated?
2. Give a detailed description of the radiographic projections which may be necessary in the investigation of a pathological lesion occupying the posterior maxilla.
3. Discuss the various opacities which may be seen in radiographs of the mandible.

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Faculty of Dentistry

ANNUAL EXAMINATIONS, 1962

Fourth Dental Year

PAPER #5

Marks

DENTAL PUBLIC HEALTH

Answer questions 1 and 2, and any one of questions 3, 4, or 5.

- 10 1. In developing plans for a local dental health programme, what factors must be considered.
- 10 2. Your community is faced with a plebiscite on fluoridation. You are allowed five short statements in support of the benefits of water fluoridation. What would these be?

Any one of 3, 4, or 5

- 5 3. Define the profession's attitude to dental public health as stated by the Canadian Dental Association in 1956.
- 5 4. In public health we speak of health agencies. Explain the basic differences between an official agency and a voluntary agency. Give an example of each.
- 5 5. What are the responsibilities of the Department of National Health and Welfare, Dental Health Division?

ENDODONTICS

- 5 1. Describe the sterile endodontic set-up for the bracket tray, naming all instruments and materials required.
- 10 2. Sodium hypochlorite and hydrogen peroxide are used in the debridement of the root canal. What precautions should be taken when using these solutions either singly or alternately?

arks

- 5 3. Give seven requirements for an ideal root canal filling.
- 5 4. Give three reasons why gutta percha is superior to a single silver cone for obliteration of the root canal in a maxillary central incisor.

PREVENTIVE DENTISTRY

- 16 1. Outline and discuss briefly the measures that can be employed in the prevention and/or control of dental caries.
- 9 2. Of what significance are the following in human nutrition?
- (a) Calcium
 - (b) Ascorbic Acid
 - (c) Vitamin D

PRACTICE MANAGEMENT

- 15 1. Set up a method of keeping a business record of professional income and expenses on a monthly basis.
- 10 2. Describe an effective dental recall system.

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Faculty of Dentistry

ANNUAL EXAMINATIONS, 1962

First Year Dental Hygiene

DENTAL HISTOLOGY

1. With the aid of a diagram name the groups of principal fibers found in the periodontal membrane of a functioning tooth, and indicate their relative direction.
2. Write a short note on each of the following:
 - (a) The rests of Malassez
 - (b) Sharpey's fibers
 - (c) The osteoblast cell
3. List in point form the differences between gingiva and alveolar mucosa.
4. In point form compare the microscopic structure of cellular cementum with that of primary dentin.
5. List the age changes one might expect to find in the pulp of an old living tooth.

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ANNUAL EXAMINATIONS, 1962

First Year Dental Hygiene

DENTAL PROPHYLAXIS

Marks

- | | | |
|----|----|--|
| 20 | 1. | Describe, using a drawing, the components of the periodontium. |
| 20 | 2. | Make a drawing of sub-gingival calculus in a gingival pocket. |
| 20 | 3. | Outline a classification of gingivitis. |
| 20 | 4. | Discuss the procedures of the oral prophylaxis appointment and the personal care by the patient as measures in the control of dental caries and periodontal disease. |
| 15 | 5. | a. Describe main manifestations of gingival pockets and infrabony pockets. |
| 5 | | b. State which principle or principles are effective for the treatment of gingival pockets. |

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ANNUAL EXAMINATIONS, 1962

First Year
Dental Hygiene
ENGLISH COMPOSITION

Write a well-organized essay of approximately 1,000 words on ONE of the following topics. You are being examined on your ability to organize and express ideas, arguments, and supporting evidence. The essay should indicate competence in spelling, punctuation, and paragraphing. Write legibly.

1. "No man is an Island, entire of itself; every man is a piece of the Continent, a part of the main;any man's death diminishes me, because I am involved in Mankind; and therefore never send to know for whom the bell tolls; it tolls for thee."
(John Donne)
2. The Aims and Methods of Modern Advertising.
3. Should literature be written to instruct or to entertain? You might illustrate your answer to this question by referring to specific works on this year's English course.

I Diet. Hygiene

English Literature.

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First Year

ENGLISH LITERATURE

Answer FOUR questions one from each section.

A

1. Compare Miller's view of the common man as a proper vehicle for tragedy with Aristotle's conception of the tragic hero.
2. "Christianity, Psychology and Socialism all tend to destroy tragedy." Discuss.
3. To what extent does Great Expectations reflect the influence of earlier novelists?
4. Examine the view that the function of poetry is to teach. What poets on the course do you regard as teachers?

B

5. Discuss Shaw's contention concerning Antony and Cleopatra that "the world was not well lost by the twain".
6. Compare the attitudes of Shakespeare and Milton toward woman as revealed in their respective portraits of Cleopatra and Dalila.
7. "Death of a Salesman is more a sociological survey than a tragedy." Discuss.
8. "The play would be an incoherent and clumsy failure were it not for the brilliant second act." Discuss this assessment of Major Barbara.

C

9. How far is Swift's criticism of Man and Society, in Books II and III of Gulliver's Travels, relevant for us today?

10. "It is remarkable that Pip retains our sympathy in what is, after all, a 'snob's progress'." Discuss.
11. Is Huckleberry Finn anything more than an amusing adventure story for boys?
12. "Portrait of an Artist describes the conflict in the life of every individual, experienced in realizing his personal identity." Discuss.

D

13. Give a critical analysis of the following poem.

To the Thawing Wind

Come with rain, O loud Southwester!
 Bring the singer, bring the nester;
 Give the buried flowers a dream;
 Make the settled snowbank steam;
 Find the brown beneath the white;
 But whate'er you do tonight,
 Bathe my window, make it flow,
 Melt it as the ice will go;
 Melt the glass and leave the sticks
 Like a hermit's crucifix;
 Burst into my narrow stall;
 Swing the picture on the wall;
 Run the rattling pages o'er;
 Scatter poems on the floor;
 Turn the poet out of door.

14. "Donne's poetry, like that of Browning, is more directed to the head than the heart." Discuss, referring to at least one poem by each poet.
15. Compare a poem by Pope with a poem by Keats OR Yeats OR Eliot.

I Dental Hygiene

Food Chemistry

UNIVERSITY OF TORONTO
Faculty of Dentistry

ANNUAL EXAMINATIONS, 1962

First Year Dental Hygiene

FOOD CHEMISTRY

Examiners - C.G. Elliott
J. Scott

ALL QUESTIONS TO BE ANSWERED

1. (a) Tell how you would prepare one liter of each of the solutions:
(i) 3N HCl (ii) 3% W/V NaCl (iii) 0.25 molar NaCl.
H = 1 Cl = 35 Na = 23
- (b) What do the numbers of the pH system actually express? Why is this system useful when working with weak acids and dilute solutions of strong acids?
- (c) How can pH values be measured?
2. (a) What is the meaning of each of the following suffixes when used in naming organic compounds? 'al', 'ane', 'ol', 'one', 'ene', 'oic'.
Give an example for each group of compounds and a structural formula where possible.
- (b) Give equations for (i) preparation of an ester and
(ii) preparation of acetaldehyde.
3. (a) How do the members of the following pairs differ from each other: fat and fatty acid; detergent and soap; wax and lipid?
- (b) With respect to fats discuss each of the following: tri hydric alcohol; rancidity; iodine number; saponification; unsaturation.
- (c) Discuss the mechanism and commercial importance of hydrogenation of fats.

- (a) Write the Haworth structural formula for glucose in both its complete and simplified forms.
 - (b) List and explain all the information that is conveyed in the name of the following compound:
D (-) fructose.
 - (c) With respect to carbohydrates, discuss each of the following: Fehling's test, osazone, maltose, polysaccharide, pentose, cellulose, galactose.
-
- (a) Describe with structural formulae: (i) amino acid and (ii) peptide bond. What is the significance of these with respect to protein.
 - (b) Discuss briefly the following: essential amino acid, conjugated protein, biuret test, Millon's test.
-
- (a) What are enzymes? How are they named. How do pH and temperature affect their action?
 - (b) List any three digestive enzymes and describe their action.
 - (c) What are vitamins? What are steroids?

UNIVERSITY OF TORONTO
Faculty of Dentistry

ANNUAL EXAMINATIONS, 1962

First Year Dental Hygiene

GROSS AND DENTAL ANATOMY

Answer PARTS A and B in separate examination books.

Marks

DENTAL ANATOMY

PART A

- 20 1. (a) Draw the occlusal view of $\overline{16}$ and label the grooves, cusps and ridges.
 (b) Prepare a classification for variations and anomalies, and give an example for each division and subdivision in your classification.

GROSS ANATOMY

PART B

- 20 2. Describe the mandibular division of the trigeminal nerve under the headings:
 (a) Branches
 (b) Distribution ..
- 20 3. Write short notes on:-
 (a) The maxilla
 (b) The palatine tonsil
 (c) The submandibular gland
- 20 4. Describe the venous drainage of the head and neck. Labelled diagrams may be used.
- 20 5. Give an account of:-
 (a) The female reproductive system.
 (b) Implantation of the fertilized ovum.

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PSYCHOLOGY I n

First Year Dental Hygiene

No Paper Available

Dental Hygiene

Dental Public Health

UNIVERSITY OF TORONTO
Faculty of Dentistry

ANNUAL EXAMINATIONS, 1962

Second Year Dental Hygiene

DENTAL PUBLIC HEALTH

Marks

- 15 1. The "community effort" is one of the principles of public health procedure. What avenues of approach are used in organizing a community dental health programme?
- 15 2. (a) Differentiate between the establishment of a County Health Unit Board and a Board of Health in a metropolitan municipality.
(b) Under what legislation would the following situations be governed?
- (1) The licensing of the dental hygienist to practise in Ontario.
 - (2) The provision of dental services in Ontario Hospitals (mental health).
 - (3) The provision of dental services aboard the ship "C.D. Howe" while on the summer service cruise in the Arctic.
 - (4) Dental care of the children on the Brant Indian Reserve.
 - (5) The railway dental coach service to remote areas in northern Ontario.
- 15 3. Briefly discuss the following aspects of dental caries:
- (1) Extent to which Canadians without fluoridated water are affected.
 - (2) Immunity: Self-repair properties of teeth.
 - (3) Recurrent attacks: Accumulation of treatment needs.
 - (4) Mass therapy.
 - (5) Fluoridation.

arks

- 5 4. (a) What is the basic concept of random sampling?
(b) Give five examples of statistical error arising from bias.
(c) List in sequence the headings for compiling the report of a dental survey of school children.
- 0 5. (a) What is the Canadian Dental Service Plans Incorporated?
(b) Describe briefly the two plans now operating under D.S.P.I. in Ontario.
(c) What benefits are offered by Physicians' Services Incorporated?
(d) State four categories under which preventive measures are classified giving one example for each.
- 0 6. (a) There are two types of acquired immunity. Identify these and describe the difference.
(b) List reasons you would give a mother of a child for maintaining primary teeth in good dental health.
(c) List the basic responsibilities of parents for their children's dental health.
(d) To whom is credited the establishment of the dental hygienist as an auxiliary of the dental profession? What was the date?

Dental Radiography.

UNIVERSITY OF TORONTO
Faculty of Dentistry

ANNUAL EXAMINATIONS, 1962

Second Year Dental Hygiene

DENTAL RADIOGRAPHY

All questions of equal value.

Answer briefly, in point form where possible.

1. a) What is natural and background radiation? Give examples.
b) Why should the dental radiographer have a knowledge of the quantity of natural and background radiation to which the human race is exposed?
2. List the functions of the developer, rinse bath, fixer and wash water in film processing.
3. List the factors which could be responsible for a radiograph which is too light.
4. a) In what way does a radiograph made at ninety kilovolts differ in appearance from one made at sixty-five kilovolts?
b) What is one advantage and one disadvantage of the use of high speed films in dental radiography?
5. Indicate the technique (in a few words only) for making a periapical radiograph of the upper first molar region in an adult who has all his teeth.
Answer under the following headings:
 - a. vertical angulation of cone
 - b. patient's head position
 - c. position of film in mouth
 - d. point on face at which cone tip is placed
 - e. horizontal angulation of cone

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What variations in the upper first molar technique mentioned in question five might be necessitated by:

- a. a gagging patient
- b. a slippery palate
- c. a shallow, flat palate
- d. an edentulous mouth
- e. a child patient

List the ways in which the radiation hazard to the patient may be reduced in dental radiography.

- a) List the factors responsible for stained radiographs.
- b) What is the commonest cause of water marks on dental radiographs?

UNIVERSITY OF TORONTO
Faculty of Dentistry

ANNUAL EXAMINATIONS, 1962

Second Year Dental Hygiene

PATHOLOGY

1. Explain the difference between active and passive hyperaemia, giving examples of each showing how they may affect the tissues involved.
2. List the processes that control the passage of fluids into and out of blood capillaries and give one example each of local and systemic oedema.
3. Describe the process of gangrene giving examples of both wet and dry types.
4. Explain the development of enamel hypoplasia including its aetiology, age of onset and physical disturbances.
5. Describe all the clinical signs of acute gingivitis and explain the pathologic changes that account for each sign.
6. Describe briefly the development and progression of a carious lesion on a smooth enamel surface.

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Faculty of Dentistry

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ANNUAL EXAMINATIONS, 1962

Second Year Dental Hygiene

PHARMACOLOGY

1. What is meant by the following terms? Give one example of each.
 - (a) antiseptic
 - (b) thromboplastic
 - (c) caustic
 - (d) absorbent
2. (a) Give one example each of the following types of central nervous system stimulants.
 - 1) Cerebral Stimulants
 - 2) Anti-aminesterases
 - 3) Medullary Centre
 - 4) Carotid Body
 - 5) Spinal Cord

(b) What are the effects and therapeutic use of Aromatic Ammonia Spirit?
3. (a) List the effects of a therapeutic dose of Atropine.

(b) What drug may be administered as an antidote to an overdose of Atropine.
4. List the effects of a therapeutic dose of:
 - (a) Meperidine Hydrochloride
 - (b) Pentobarbitone
5. What is the dental significance of the following drugs used as medication for systemic disease.
 - (a) adrenocortical steroids
 - (b) diphenylhydantoin
 - (c) acetylsalicylic acid

II Dental Hygiene

Pharmacology

UNIVERSITY OF TORONTO
Faculty of Dentistry

ANNUAL EXAMINATIONS, 1962

Second Year Dental Hygiene

PHYSIOLOGY

1. a. List and discuss the factors maintaining normal arterial blood pressure.
b. Indicate by a diagram the changes in blood pressure as the blood flows from artery to arteriole to capillary to venule.
2. a. Outline, using a diagram, how the level of thyroid hormone in the blood is regulated.
b. Discuss the physiological function of the thyroid hormone.
3. Describe the operation of pressure differences in the transport of carbon dioxide from the tissues into the blood, from the blood into the alveoli, and from the alveoli through the nostrils. Indicate the magnitudes of the pressure differences.
4. Describe swallowing.
5. Write brief notes on the following:
 - a. Water balance
 - b. Destruction and rebuilding in living things
 - c. The coagulation of blood
 - d. The erythrocyte
 - e. The carotid sinus

REPORT ON THE
PROGRESS OF THE

WORK DURING THE YEAR
ENDING 31st DECEMBER 1900

By
THE SECRETARY

Presented to the Council of the Institution of Mechanical Engineers
at their meeting on the 15th January 1901

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UNIVERSITY OF TORONTO
Faculty of Dentistry

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ANNUAL EXAMINATIONS, 1962

Second Year Dental Hygiene

PREVENTIVE DENTISTRY

Answer each question in separate book.

Marks

- 15 1. a. Discuss the factors that may influence:
 i. food composition with regard to
 nutrient content

 ii. choice or selection of food
- 5 b. What suggestions could be made for a low
 income family in Toronto with regard to
 choice and serving of foods to insure an
 adequate intake of calcium or vitamin C
 or protein. (Choose one)
- 20 2. Outline the procedures that should be
 followed in the control of rampant dental
 caries in a young patient.
- 20 3. a. Describe in detail a method of assessing
 the diet of a patient who is very
 susceptible to dental caries.
- b. Discuss and compare two methods of
 dietary correction suitable for such a
 patient.

CHAPTER I
GENERAL PRINCIPLES

SECTION I
OF THE NATURE AND SCOPE OF THE STUDY

SECTION II
OF THE HISTORY AND DEVELOPMENT OF THE STUDY

SECTION III
OF THE METHODS AND TECHNIQUES OF THE STUDY

SECTION IV
OF THE RESULTS AND CONCLUSIONS OF THE STUDY

1. The first section of the study is devoted to a general survey of the subject matter. It is intended to give the reader a clear and concise idea of the scope and nature of the study, and to point out the main questions which are to be dealt with in the subsequent sections.

SECTION V
OF THE CONCLUSIONS AND RECOMMENDATIONS OF THE STUDY

2. The second section of the study is devoted to a detailed examination of the subject matter. It is intended to give the reader a clear and concise idea of the scope and nature of the study, and to point out the main questions which are to be dealt with in the subsequent sections.

3. The third section of the study is devoted to a detailed examination of the subject matter. It is intended to give the reader a clear and concise idea of the scope and nature of the study, and to point out the main questions which are to be dealt with in the subsequent sections.

4. The fourth section of the study is devoted to a detailed examination of the subject matter. It is intended to give the reader a clear and concise idea of the scope and nature of the study, and to point out the main questions which are to be dealt with in the subsequent sections.

5. The fifth section of the study is devoted to a detailed examination of the subject matter. It is intended to give the reader a clear and concise idea of the scope and nature of the study, and to point out the main questions which are to be dealt with in the subsequent sections.

Marks

- 20 4. a. What is meant by an Early Mesial Shift?
- b. What are the uses of an intra-alveolar space maintainer?
- c. List four causes of an abnormal diastema between 1 and 1 in an eight year old child.
- d. Define Ectopic Eruption.
- 20 5. a. What factors limit the amount and type of Orthodontics to be done for a patient?
- b. During the period of Orthodontic treatment what operations could the Hygienist perform?

SOCIOLOGY 1a
Introduction to Sociology

Part I

Answer any five of the following:

Distinguish between

- a. Crescive and enacted institution
- b. Apartheid and integration
- c. Fertility and fecundity
- d. Class and caste
- e. Acculturation and diffusion
- f. Crude birth rate and general fertility rate
- g. Normative and functional integration
- h. Formal and informal organization

Part II

Answer either A or B

- A. What are the characteristics and types of crowds? What can we generalize from the 1919 Chicago race riot?

- OR -

- B. Compare and contrast the studies by Dollard (Class and Caste in Southern Town) and Hollingshead (Elmtown's Youth) in terms of their adherence to the demands of the scientific method.

Part III

Answer any two of the following:

1. What are the characteristics of bureaucracy? How does it differ from a voluntary association? How do problems of inefficiency arise in a bureaucracy?
2. Discuss the historical trend of world population growth, calling attention to the relationship between various demographic processes in causing increases or decreases of population.
3. With regard to the phenomenon of social and cultural change:
 - a. discuss the conditions giving rise to innovations in any society.
 - b. discuss the factors influencing the acceptance of innovations.

(Over)

4. Discuss fully the concept of social norms, indicating the several kinds, the sanctions used for enforcement, and the functions of norms in society.
 5. Discuss the effects of the mass media of communication upon crime and delinquency.
- ①

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